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APPLICATION OF THE PATIENT CHECKLIST TOOL IN ANESTHESIA HANDOFFS

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APPLICATION OF THE PATIENT CHECKLIST TOOL IN ANESTHESIA HANDOFFS

By

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APPLICATION OF THE PATIENT CHECKLIST TOOL IN ANESTHESIA HANDOFFS

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ABSTRACT

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By

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Accurate and essential communication is required during the transfer of patient care from one health care provider to another. Communication errors during the handoff process have been identified as contributing factors in sentinel events. There is a plethora of literature supporting a standardized transfer of care process as well as several accepted handoff communication tools for the various units within a healthcare institution. However, in the anesthesia domain, there is currently only one protocol specifically created for the transfer of patient care between certified registered nurse anesthetists (CRNAs). The PATIENT protocol, created by Dr. Suzanne M. Wright, CRNA, PhD (2013) provides a systematic approach in reporting accurate patient information during the transfer of care process. The purpose of this exploratory replication scholarly project was to determine if CRNAs believed the established PATIENT transfer of care protocol enhances communication between CRNAs during the anesthesia handoff process. Descriptive statistics and correlation methods were utilized and analysis of the data suggest the majority of CRNA participants liked the idea of a standardized TOC tool and agreed the PATIENT protocol provided an effective way to organize patient information. The PATIENT protocol is a tool that could be implemented during all anesthesia transfer of care periods promoting safe anesthesia practice leading to positive patient outcomes.

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Introduction to the Problem

The process of transferring patient care to a different healthcare provider occurs for a variety of reasons including break relief, change in patient assignment, patient transfer, or at the end of a shift. It is essential that accurate and current information be relayed to the relieving provider ensuring a safe transfer of care (TOC) or handoff procedure. This process has been identified by several regulatory agencies and professional organizations as having the potential to harm patients due to inaccurate and incomplete transfer of patient information. The Institute of Medicine, Committee on Quality of Health Care in America (IOM) (2001) indicated handoff reports threaten patient safety. The process wastes resources, leaves unaccountable voids in care, loses valuable patient information, all leading to inefficient and unsafe care (IOM, 2001). The Joint Commission's (TJC) review of over 3,000 root cause analyses between 1995 and 2004 identified 65% to 70% of sentinel events involved inadequate communication (Adamski, 2007; Johnson, Logsdon, Fournier, & Fisher, 2013). Additional Joint Commission data from 1995 to 2008 revealed over 60% of 4,977 sentinel events reviewed, listed communication as an influential factor (Riesenberg, Leitzsch, & Little, 2009).

In order to enhance communication and ensure a safe handoff process, it has been recommended institutions create and implement standardized TOC forms, which include opportunities for questions (IOM, 2001). In 2006, TJC instituted National Patient Safety Goal 2E indicating a standardized handoff communication tool be implemented allowing

and encouraging questions and answers (Johnson et al., 2013). In 2008, the goal was revised and additional features were added, including interactive communication between sender and receiver, providing current information, a process for verification of received information, and minimization of interruptions (Johnson et al., 2013). In addition, in 2006, the World Health Organization (WHO) (2007) likewise noted handover communication as a top five patient safety initiative.

There are several generalized handoff protocols currently utilized in various areas of healthcare. One method frequently used is SBAR, which translates to situation, background, assessment, and recommendations (Johnson et al., 2013). In 2012, TJC released a communication tool entitled SHARE which includes (a) standardize critical content, (b) hardwire within your system, (c) allow opportunity for questions, (d) reinforce quality and measurement, and (e) educate and coach staff (TJC, 2012).

Specialized areas of healthcare may require different communication tools to meet specific needs. One such area, the perioperative environment, encompasses a wide array of stages including preoperative, intraoperative, and postoperative phases. Amato-Vealey, Barba, and Vealey (2008) noted the potential for communication errors in this setting is higher due to the complexity of the patient population and the increased number of handoff occurrences that transpire with each patient. Amato-Vealey et al. also indicated high patient volumes, demands for rapid turnover and increased efficiency combined with the need to improve patient flow through the perioperative environment are specific factors leading to errors.

Transfer of care between certified registered nurse anesthetists (CRNA) occurs during the perioperative period due to break or shift relief or changes in assignments.

The American Association of Nurse Anesthetists (AANA) standards for nurse anesthesia practice devoted a standard (VII) specifically for handoff communication (AANA, 2013). AANA indicated a patient's status must be evaluated and determined to be safe prior to transferring care and responsibility from one provider to another. Pertinent information must be communicated ensuring patient safety and continuity of care (AANA, 2013). This scenario is quite different from others, as an anesthetized patient is never left unattended by an anesthesia provider during a procedure. It is imperative that essential information is communicated to the relieving CRNA in an organized and efficient manner ensuring safe, high quality, cost effective care.

Utilization of a standardized handoff CRNA checklist would satisfy both TJC's and the AANA's recommendations and provide a communication tool enhancing safe transfer of anesthesia care. The PATIENT transfer of care checklist tool (see Figure 1), developed by Wright (2013), was created after examining CRNA transfer of care processes during the intraoperative period. The checklist was designed to "improve situation awareness" (Wright, 2013, p. 225) and promote a standardized anesthesia TOC process decreasing the potential for communication errors. Wright considered checklists based on mnemonics allowed the anesthesia provider to focus on "higher-order cognitive processes for addressing newly encountered anesthesia events" (p. 226). The PATIENT checklist includes (a) patient, (b) airway, (c) temperature, (d) intravenous, (e) end-tidal carbon dioxide, (f) narcotics, and (g) twitches indicating degree of muscle paralysis (Wright, 2013). Each letter of the mnemonic represents general categories related to anesthesia care. The letter P consists of preoperative assessment, current condition, and patient positioning. A represents airway difficulty and current management, antibiotic

administration, allergies, and type of anesthetic. T includes the patient's temperature, type of monitoring device, and any heating or cooling modalities. I is for intravenous consisting of the type of all access ports, infusions, blood products, and intake and output. E stands for end-tidal carbon dioxide monitoring. This category concerns anything related to the patient's respiratory system including oxygenation, pertinent ventilation parameters, and prior and current respiratory status. N stands for narcotic and consists of past, current, and future pain management modalities. Lastly, T represents the word twitches indicating the degree of patient paralysis and associated monitoring techniques (Wright, 2013).

PATIENT PROTOCOL

P	Procedure, Patient (Quick Scan), Position
A	Anesthesia, Antibiotic, Airway, Allergies
T	Temperature
I	IVs and Other Invasive Lines
E	ETCO2, Ventilation
N	Narcotics
T	Twitches

Figure 1. PATIENT Transfer of Care Checklist Tool. Adapted from "Examining Transfer of Care Processes in Nurse Anesthesia Practice: Introducing the PATIENT Protocol," by S. M. Wright, 2013, *AANA Journal, 81*, p. 230. Copyright 2013 by the American Association of Nurse Anesthetists. Adapted with permission.

Improving Communication During Anesthesia Transfer of Care Process.

Distractions and interruptions may transpire during anesthesia handoffs compromising anesthesia TOC leading to negative patient outcomes. The PATIENT checklist has the potential to enhance effective communication by organizing CRNAs thoughts and minimizing the use of memory. The checklist will aid in systematically communicating current patient status (assessment and nursing diagnosis), treatment modalities (interventions), and physiological and behavioral responses (outcomes) during the handoff process to the receiving anesthesia provider. This scholarly project will determine if CRNAs believe the PATIENT checklist improves communication during transfer of care between CRNAs leading to greater patient safety and positive patient outcomes. In order to improve communication among CRNAs during this process leading to enhanced patient safety, the PATIENT checklist will be utilized during anesthesia TOC periods. Permission to use the checklist has been granted by the PATIENT checklist creator, Dr. Wright, CRNA (see Appendix A). CRNA participants will be instructed to use the checklist during all TOC procedures and complete a questionnaire (see Appendix B) following the use of the checklist.

Application of a Theoretical Framework

The focus of this scholarly project is to improve handoff patient communication between CRNAs. The perioperative patient focused care model (see Figure 2) considers the patient to be the core of perioperative nursing (Association of periOperative Registered Nurses [AORN], 2015; Kleinbeck, 1999; Morton, Peterson, Chard, & Kleiner, 2013). This framework was developed specifically for perioperative nursing practice and focuses on patient outcomes based upon individual patient assessments leading to nursing

diagnosis and subsequent nursing interventions (AORN, 2015). The model contains four major domains (a) safety, (b) physiological responses, (c) behavioral responses, and (d) health systems which help guide patient care (Rothrock & Smith, 2000).

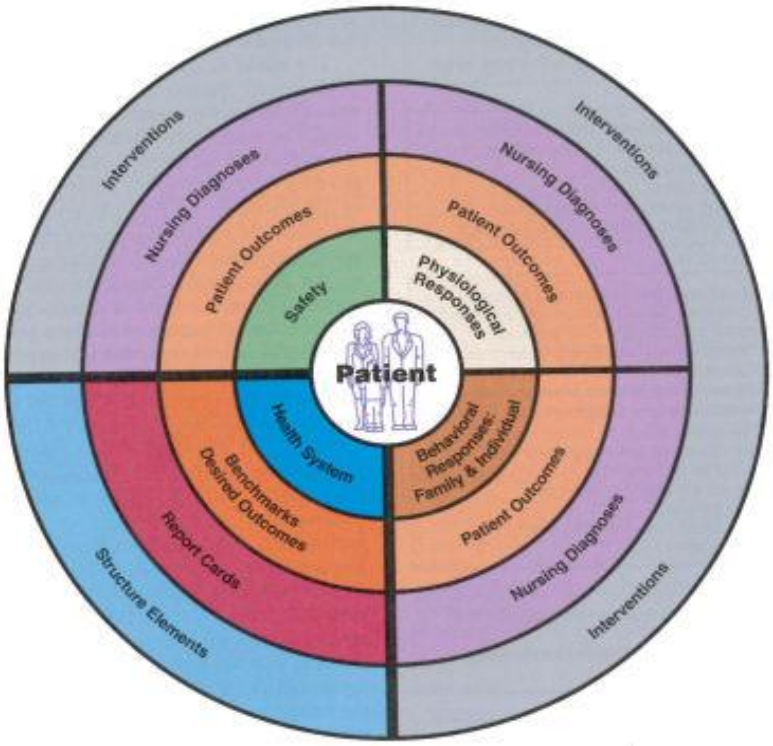

Figure 2. Perioperative Patient Focused Care Model. This figure was AORN's position at the time of publication but is undergoing revision by AORN. Reprinted with permission from Perioperative Nursing Data Set, 3rd ed. Copyright © 2015, AORN, Inc, 2170 S. Parker Road, Suite 400, Denver, CO 80231. All rights reserved.

Kleiner, Link, Maynard, and Carpenter (2014) applied this framework when discussing briefings and debriefings in the perioperative area focusing on prevention of errors with the use of improved communication. Similarly, this scholarly project will apply the perioperative patient focused model when utilizing the PATIENT checklist to enhance communication and patient safety always ensuring the patient is the center of anesthesia care (see Figure 3).

PATIENT CATEGORY	DOMAINS
P (preoperative assessment, current condition, and patient positioning)	Safety, Health Systems *
A (airway difficulty and current management, antibiotic administration, allergies, and type of anesthetic)	Safety, Physiological and Behavior Responses, Health Systems
T (patient's temperature, type of monitoring device, and any heating or cooling modalities)	Safety, Health Systems
I (anything related to intravenous administration and intake and output)	Safety, Physiological and Behavior Responses, Health Systems
E (end-tidal carbon dioxide monitoring, oxygenation, pertinent ventilation parameters, and prior and current respiratory status)	Safety, Physiological and Behavioral Responses, Health Systems
N (narcotic pain management modalities)	Safety, Physiological and Behavioral Responses, Health Systems
T (monitoring and degree of paralysis)	Safety, Physiological and Behavioral Responses, Health Systems

* Health Systems includes quality and safety benchmarks, assurance of quality control, and identification of opportunities for improvement including implementation of the PATIENT checklist.

Figure 3. Patient Protocol with Corresponding Perioperative Patient Focused Care Domains.

Significance for the Population

The perioperative environment consists of several inter-professional team members working within their own job description or scope of practice, yet sharing the common patient goal of providing a safe and high quality surgical or procedural experience. Actual and potential perioperative errors must be discussed with strategies identified to decrease and eliminate these harmful events. Effective handoff communication is a top priority regarding patient safety. Distractions and interruptions may compromise anesthesia TOC leading to negative patient outcomes. Application of the standardized PATIENT transfer of care checklist tool has the potential to enhance effective communication by organizing provider's thoughts and minimizing the use of memory, leading to a safe TOC process between anesthesia providers.

Chapter Two

Literature Review

Communication errors in health care are difficult to measure due to the complexity and variability of interactions between inter-professional teams and patients**.** An area of concern expressed by several regulatory agencies, professional organizations, and health care providers and recipients, is the transfer of patient care process (Adamski, 2007; IOM, 2001; Johnson et al., 2013). Nursing unit handoff communication transpires during shift change, break relief, changes in assignments, or unit transfers. This specific type of communication occurs in a variety of settings and each area may necessitate specific considerations not required in other locations. Perioperative TOC information typically happens within the confines of the operating room suite or department. CRNA TOC occurs within any anesthetizing location. Despite the setting, pertinent patient information is exchanged and helps guide the health care receiver's plan of care for the patient. Handoff miscommunication accounts for approximately 80% of serious medical errors and may include treatment delays, increased length of stay, and inappropriate care (TJC, 2012). The National Quality Forum (2010) report indicated standardized TOC communication is considered one of 34 practices that are evidenced based and contribute to patient safety.

Transfer of care. There may be several obstacles or distractions preventing effective communication from sender to receiver including time constraints, inattentiveness of providers, focusing on tasks at hand versus patient outcomes, and differences in opinions regarding current treatment modalities (Blouin, 2011; Halm, 2013). Human factors including sensory and information overload, fatigue, and hierarchy

or power disputes, are often barriers to effective nursing handoffs (Halm, 2013). Misuse and inadequate amount of time may lead to limited ability to ask questions or share additional information (Halm, 2013). Identification of factors leading to inaccurate transfer of patient information should be identified with strategies developed, implemented, and evaluated for effectiveness.

Staggers and Blaz (2013) conducted a comprehensive review of studies in peer reviewed journals from 1980-March, 2011 regarding nursing handoffs in medical and surgical settings. A total of 30 out of 81 articles were selected for review. The authors noted TOC processes should not be the same for every unit but rather created for each location accounting for specific unit and patient features. The absolute need for additional research focusing on unit specifics and patient centeredness was also suggested (Staggers & Blaz, 2013). Anderson, Malone, Shanahan, and Manning (2015) reviewed 45 clinical handover articles and came to the conclusion one tool does not fit all clinical areas and a customized model is well supported.

A Cochrane review was completed by Smeulers, Lucas, and Vermeulen (2014) to determine effectiveness of various nursing handoff processes for ensuring continuity of information in the hospital setting. Out of 2,178 searched citations, 28 were applicable. Due to the lack of randomized controlled studies, no eligible studies were deemed appropriate for inclusion in their review (Smeulers et al., 2014) indicating the absolute need for high level research regarding handoff communication techniques.

Generalized communication tools and mnemonic use. There are several mnemonic based TOC tools available for general and specific patient care areas. Relying on memory for information exchange is not ideal therefore, the use of mnemonics can

aide memory recollection and promote discussion of pertinent patient information during TOC processes. Riesenberg et al. (2009) conducted a literature review identifying 24 TOC mnemonics utilized throughout various patient care areas. At that time, SBAR (situation, background, assessment, recommendation) was the most frequently used at 69.6% (Riesenberg et al., 2009). Despite the large number of specific TOC tools, a lack of high quality outcomes studies exists (Riesenberg et al., 2009).

It is imperative that evidenced based practice guides TOC protocols throughout patient care areas in order to create high quality, cost effective care. Dufault et al. (2010) developed a standardized, patient centered, best practice TOC protocol incorporating TJC, National Quality Foundation, the Agency for Healthcare Research and Quality (AHRQ) recommendations, and empirical evidence from 42 studies pertaining to hand off processes. The protocol created was SBARP, with 'P' indicating patient. Each step contained explicit instructions for use with associated research findings and theoretical evidence. The Joint Commission Center for Transforming Healthcare (2016) in conjunction with 10 United States hospitals collaborated in creating the Hand-off Communication Targeted Solutions Tool, which demonstrated an average of 50% decrease in faulty handoff procedures (Blouin, 2011; Joint Commission Center for Transforming Healthcare, 2016). The tool utilized the acronym, SHARE, which stands for (a) standardize critical content, (b) hardwire within your system, (c) allow opportunity to ask questions, (d) reinforce quality and measurement, and (e) educate and coach (Blouin, 2011; Joint Commission Center for Transforming Healthcare, 2016).

Starmer et al. (2014) indicated medical errors and preventable adverse events were reduced after implementation of a resident handoff improvement program, which

included written and oral documents in nine hospitals. An overall 23% decline in medical error rates and a 30% decrease in preventable adverse events in 10,740 admissions were noted (Starmer et al., 2014). The tool, I-PASS Handoff Bundle (illness severity, patient summary, action list, situation awareness and contingency plan, and synthesis by receiver) was developed with the goal of improving communication and patient safety (Starmer et al., 2014).

Handoff tools provide structure and organization in communicating patient information and are categorized in a variety of ways. Abraham, Kannampallil, Almoosa, Patel, and Patel (2014) compared a problem-based model (SOAP) with a body system based model, Handoff Intervention Tool (HAND-IT). SOAP (subjective, objective, assessment, and plan) utilized a problem-based framework focusing on patient history (subjective), vital signs (objective), differential diagnosis (assessment), and any new procedures or orders (plan). HAND-IT emphasized individual body systems (cardiovascular, pulmonary, neurology, etc.) utilizing a checklist addressing physical exam, medications, problem lists, and assessment and diagnosis for each particular system (Abraham et al., 2014). Study results indicated the HAND-IT model allowed for streamline communication and increased organization regarding patient information (Abraham et al., 2014).

Perioperative communication tools. The transfer of care process from the perioperative environment to the post anesthesia care unit (PACU) or intensive care unit (ICU) is quite different from nursing units as it involves a multitude of health care members including surgeons, anesthesia providers, and registered nurses (RNs). Variations from nursing unit TOC processes include different provider levels of training

(advanced practice nurses versus RNs), high risk patients recovering from anesthesia, and the transfer of technology including hemodynamic monitors, specialty intravenous medications, and various airway management devices (Petrovic, Martinez, & Aboumatar, 2012). In particular, perioperative communication errors are extremely problematic to determine due to the ever-changing nature of the environment.

Greenberg et al. (2007) noted 60 cases of 444 surgical malpractice claims involved a breakdown in communication leading to patient harm. The 60 cases involved a total of 81 communication issues with 38% occurring in the preoperative area, 30% intraoperatively, and 32% in the postoperative areas (Greenberg et al., 2007). A total of 43% of communication errors occurred during the handoff period (Greenberg et al., 2007). A different study of 20 surgical patients demonstrated an information loss of 61.7% of preoperative handoffs and 52.4 % of postoperative handoffs and a noted decline of information from the operating room to the PACU and then to the receiving unit (Nagpal, Vats, Ahmed, Vincent, & Moorthy, 2010).

AANA (2014) suggested collaboration and effective communication between the patient and all health care team members promotes safe surgery and anesthesia. Specific communication barriers affecting the TOC process in operating rooms included verbal reports that rely on memory, noise distractions, multitasking, pressure due to time constraints, and frequent interruptions (Johnson et al., 2013). The SWITCH handoff tool was created due to problems with communication, distractions, and other factors relating to inaccurate transfer of care (Johnson et al, 2013). The mnemonic stands for (a) surgical procedure, (b) wet (fluids), (c) instruments, (d) tissue, (e) counts, and (f) ‘have you any questions’. The tool was primarily made for RN handoff procedures utilizing a

mnemonic that was pertinent and easily understood. Of those completing a survey to measure compliance, 97% (*n* =33) indicated the tool was important for patient safety and 87% (*n* =33) reported it was easy to use (Johnson et al., 2013). Variations of the tool are being used for anesthesia and indirect patient care (Johnson et al., 2013). Petrovic et al. (2012) created The Perioperative Handoff Tool and surgery checklist, which mandated bedside physical presence during transfer, provided an organized checklist for report allowing patient and technology discussion, removed role ambiguity, and permitted and encouraged questions.

Anesthesia handoff tools. Cooper, Long, Newbower, and Philip (1982) reviewed over 1,000 incidences of anesthesia related errors and suggested a specific protocol be developed to aid in anesthesia handoff procedures. Lane-Fall, Brooks, Wilkins, Davis, and Riesenberg (2014) conducted a perioperative anesthesia TOC literature search which indicated only five studies in the last 40 years, were clearly related to intraoperative handoffs. Saager et al. (2014) reviewed 138,932 adult surgical cases and results indicated each anesthetic handover increased morbidity and mortality by 8%. In this study, handoff time was considered greater than 40 minutes therefore 'breaks' of shorter duration were not included. There was no difference between anesthesia providers (residents or CRNAs) regarding adverse effects and the use of a standardized TOC form was not utilized. Saager et al. concluded, based on previous research and their own beliefs, having a more formal anesthesia TOC process would be beneficial.

The use of electronic handoff tools is beginning to emerge during anesthesia TOC. Jayaswal et al. (2011) conducted a survey involving 80 anesthesia staff, residents,

and nurse anesthetists. The majority of participants at 89% believed patient care could be improved with a standardized TOC process, and 62% favored utilizing the electronic medical record (EMR) with the handoff process. In a study of 69 handoffs, with 39 occurring with and 30 occurring without the checklist, Agarwala, Firth, Albrecht, Warren, and Musch (2015) noted significant improvements regarding communication, transfer of information and retention with the use of an electronic checklist. Participants reported higher satisfaction with quality of communication at handoff two-thirds of the time (Agarwala et al., 2015).

Anesthesia providers sign in when assuming care and sign out when being relieved of care in the medical record. Tan and Helsten (2013) embedded an anesthesia handoff checklist into their anesthesia information management system (electronic anesthesia patient record) requiring anesthesia providers to complete the checklist before they formally signed in indicating transfer of anesthesia care. The computer tabs listed information regarding demographics, medical and surgical history, home medications, surgical procedure, type of anesthesia, airway management, muscle relaxation state, and patient position. Vital signs, hemodynamic and oxygenation values, trends, fluid management, estimated blood loss, pain management, and the anticipated anesthetic and postoperative plan were also noted under various computer tabs (Tan & Helsten, 2013).

PATIENT transfer of care checklist tool. There is one known article explicitly related to the CRNA handoff procedure. Wright (2013) developed the PATIENT checklist, specific for anesthesia providers and includes (a) patient, (b) airway, (c) temperature, (d) intravenous, (e) end-tidal carbon dioxide, (f) narcotics, and (g) twitches indicating degree of muscle paralysis. A survey was completed by 30 CRNAs using the

checklist with 90% indicating length and content were appropriate. All respondents agreed or strongly agreed the checklist was effective in organizing pertinent information (Wright, 2013). The PATIENT checklist supports the AANA Standard VII:

> Evaluate the patient's status and determine when it is safe to transfer the responsibility of care. Accurately report the patient's condition, including all essential information, and transfer the responsibility of care to another qualified healthcare provider in a manner that assures continuity of care and patient safety. (AANA, 2013, p. 2)

There is an abundance of literature supporting a formalized TOC process in many areas of healthcare however there is only one known tool regarding CRNA TOC methods. This project is a replication study utilizing the anesthesia PATIENT checklist created by Wright and focuses on anesthesia specific handoff processes as there is very little research or information explicitly related to anesthesia provider TOC.

Application of the PATIENT checklist has the potential to enhance communication by organizing CRNAs thoughts and minimizing the use of memory. This scholarly project will determine if CRNAs believe the PATIENT checklist improves communication during transfer of care between CRNAs leading to greater patient safety and positive patient outcomes.

Perioperative patient focused framework-theoretical model. The perioperative area encompasses a wide variety of patient populations and surgical and non-surgical procedures. Inter-professional perioperative care is provided in a team and systematic approach with the use of checklists, counting systems, double-checking processes, and a variety of highly technical equipment and monitoring devices. An appropriate

framework for anesthesia handoff procedures is the perioperative patient focused model (See Figure 2). The model, developed by the Association of periOperative Registered Nurses (AORN), is patient centered and considered to be a practice model for perioperative nursing practice.

The application of the perioperative patient focused model is appropriate for use in this replication scholarly project as the model concentrates on patient outcomes utilizing the nursing process of assessment and interventions while ensuring the patient is at the center of the model. Similar to RNs, CRNAs use specific interventions in order to achieve a desired outcome, which are individualized for the patient based on focused assessments. Rothrock and Smith (2000) indicated routine perioperative interventions are instituted to ensure safety. CRNAs apply their advanced knowledge in assessing the patient to determine and select the appropriate, individualized interventions leading to the desired patient outcome while administering a safe anesthetic. During the TOC process, effective communication is imperative in order to ensure the patient's safety. The PATIENT checklist is a tool promoting effective communication between CRNAs regarding patient assessment, interventions, and desired outcomes and when utilized enhances the safe transfer of patient care.

There are four major domains of the perioperative patient focused model. The first three, safety, physiological response, and behavioral response are specific for the surgical or procedural experience throughout the perioperative process. The fourth domain is health systems, which encompasses anything supporting the perioperative environment, CRNA, and the patient (Rothrock & Smith, 2000). This model will be utilized to illustrate the relationship between the dynamic intraoperative environment and

CRNA TOC processes utilizing the PATIENT checklist, which may improve communication leading to enhanced patient safety and positive patient outcomes.

The model is illustrated as a circle with the patient in the middle. The four major domains of safety, physiological responses, behavioral responses, and health systems surround the patient. The circle extends from the domains with the next circle being patient outcomes. Nursing diagnosis follows and is completed by interventions. The fourth domain, health systems, is separated from the others and contains patient, followed by health systems, benchmarks and desired outcomes, report cards, and structure elements. The model represents nursing diagnoses applied in perioperative care within a structured system "to achieve desired physiological, behavioral, and safety outcomes for patients before, during, and after surgical or invasive procedures" (Kleinbeck, 1999, p. 21).

The framework's safety domain focuses on patient outcomes including medication safety, proper use of chemicals, patient positioning, and generally anything related to patient safety (Lamberg, Salantera, & Junttila, 2013). The PATIENT checklist focuses on the domain of patient safety as desired patient outcomes may include freedom from injury related to miscommunication. The checklist provides an organized and systematic communication TOC approach utilizing a mnemonic that addresses specific information relating to the patient and their anesthetic. Patient safety is enhanced due to less chance for miscommunication and prevention of lack of communicating vital information. Nursing diagnosis within the safety domain may include risk of injury with specific interventions related to patient positioning which is part of the PATIENT checklist. Application of the PATIENT checklist prompts the CRNA to share patient

positioning information during the TOC process leading to increased patient safety as the CRNA is not relying on memory but rather performing a systematic approach with the help of an organized tool.

The framework's physiological responses domain applies to any biological patient function including all body systems, fluid and electrolyte balance, and infection control considerations (Lamberg et al., 2013). The PATIENT checklist incorporates several physiological areas including ventilation and airway information. A potential nursing diagnosis related to the respiratory system is risk of endotracheal tube displacement related to patient positioning. CRNA interventions include frequent position checks and the use of a precordial stethoscope that allows the CRNA to continuously listen to breath sounds. A stable and patent airway maintained throughout the perioperative period would be considered a positive patient outcome. The PATIENT checklist notes patient position, ventilation, and end-tidal CO_2 ($ETCO_2$) information that are indicators related to the physiological status of the patient.

Behavioral responses/family and individual domain is the final framework domain utilizing the nursing process. This area focuses on sociological, spiritual, and psychological aspects of patient and family care and also includes all areas of patient knowledge and education (Lamberg et al., 2013). This domain is considered in the first part of the PATIENT checklist and includes the perioperative procedure and type of anesthesia. For example, if the patient is having a regional anesthetic instead of a general anesthetic approach, the patient must be informed of the potential for hearing noises as they may be only partially asleep. The CRNA must evaluate if the patient fully understands the risks and benefits, address any fears or anxiety, and keep the patient free

from physical and/or emotional injury during the perioperative period. Potential for emotional distress could be considered a nursing diagnosis within this domain. Interventions include psychological and emotional support throughout the period with an expected outcome of maintenance of emotional stability. Application of the framework enhances patient and family understanding of the perioperative course, decreases anxiety, and promotes a pleasant patient experience leading to a positive and safe patient outcome. This information is shared with CRNAs during the TOC process when the PATIENT checklist is utilized again supporting a positive and safe patient outcome.

Lastly, the health systems domain encompasses the healthcare environment in which care is provided. In this section, outcomes are equivalent to benchmarks, diagnosis corresponds to report cards, and interventions relate to processes required for change in the healthcare system (AORN, 2015; Kleinbeck, 1999). A health systems outcome may be the implementation of the PATIENT checklist tool for all CRNA TOC processes. The nursing diagnosis is risk for injury as evidenced by lack of structured communication, reliance on memory, distractions, and a deficiency of education regarding the need for a standardized TOC tool. Interventions may include handoff communication education, current literature review, discussion of the original PATIENT study (Wright, 2013), and introduction of the PATIENT checklist tool.

The perioperative patient focused model was developed through statistical analysis (Kleinbeck, 1999) and is included in several medical-surgical textbooks. It is organized, logical, and systematic in nature. The perioperative patient focused model is applicable for this scholarly project as the 'patient' is always at the center of all domains. The model emphasizes patient outcomes determined by assessment and can be utilized

during any procedure requiring nurse anesthesia practice. The PATIENT checklist is also logical, organized, and follows a 'systems' approach keeping the patient at the center of anesthesia TOC process. The framework and the PATIENT checklist may enhance patient safety by effectively communicating vital patient and environmental information during the TOC process. The use of the PATIENT checklist will add to the framework, with the potential to improve nurse anesthesia practice, and most importantly, may increase patient safety leading to positive patient outcomes.

Chapter Three

Purpose and Sample

It has been established by the IOM (2001), TJC (Adamski, 2007; Johnson et al., 2013; Riesenberg et al., 2009), the WHO (2007), and the AANA (2013) that handoff communication between healthcare providers threatens patient safety therefore the use of standardized TOC tools should be implemented in all areas where patient TOC occurs. There is an abundance of literature regarding the TOC process in many areas of healthcare however there is little information specifically regarding CRNA TOC methods. The PATIENT checklist, created by Dr. Wright (2013) is the first known TOC tool specifically for anesthesia providers. The protocol was developed after monitoring CRNA TOC methods in an effort to decrease transfer variability while maintaining continuity of anesthesia care leading to positive patient outcomes. The primary purpose of this exploratory replication scholarly project is to determine if CRNAs believe the established PATIENT transfer of care protocol (Wright, 2013) enhances communication between CRNAs during the anesthesia handoff process. A secondary purpose is to add knowledge to all areas of nursing with an emphasis on nurse anesthesia practice and to encourage standardization of the CRNA TOC process enhancing patient safety. Permission to use the checklist and questionnaire has been granted by the PATIENT checklist tool creator, Dr. Wright, CRNA, PhD. CRNAs from a regional medical center were asked to participate in this scholarly project. Using an internet based sample size calculator with a population number of 20 (number of CRNAs currently employed at the hospital) and a confidence level of 95%, it was determined the minimum convenience

sample size for the scholarly project was 20. All CRNAs working at the hospital were included. Personnel who were not CRNAs were excluded from this scholarly project.

Project Approval

Institutional review board (IRB) approval under the administrative review process was obtained from Northern Michigan University (NMU) and the hospital prior to project implementation (see Appendices D and E).

Study Protocol

The PATIENT checklist tool was presented at the CRNA monthly staff meeting and included the following: (a) rationale and proposed benefits of the PATIENT checklist, (b) guidelines regarding the use of the PATIENT checklist, (c) instructions on filling out the questionnaire following use of the PATIENT checklist, and (d) an opportunity for questions and further discussion. Participants were instructed to utilize the PATIENT checklist during all TOC periods and after an approximate 1-week period, complete the questionnaire and send via stamped envelope to the principal investigator. A second CRNA staff meeting was attended to answer any questions and collect completed questionnaires not previously mailed. In addition, a protocol was distributed to all CRNAs in attendance at both staff meetings (see Appendix F). All participants were given a pocket size laminated card listing the PATIENT checklist for use during the TOC process created by Dr. Wright. Cards were also distributed to participants and they were asked to put a card in each anesthetizing location throughout the institution

Completed questionnaires were collected for three months. Data will be secured in the principal investigator's locked office in a locked cabinet for a period of seven years following scholarly project completion.

Instruments

A mixed methods questionnaire, created by Wright (2013), containing six Likert-style questions and four open ended questions evaluating the use of the PATIENT checklist tool was utilized (see Appendix A). The questionnaire was developed by an expert panel and pilot tested during Wright's initial study. Mixed method research allows for a more comprehensive viewpoint by analyzing both quantitative and qualitative methods (Terry, 2015).

Informed Consent, Risks, and Benefits

CRNAs were informed participation was voluntary and refusal to participate or discontinue participation involved no penalty or loss of benefits. Completion of the questionnaire served as consent for participation. A written protocol was distributed to all volunteers indicating risks and benefits (see Appendix F). Risks included loss of work time due to using an unfamiliar PATIENT checklist and filling out a questionnaire therefore to minimize time participants needed to commit, instructions were provided at the CRNA staff meetings. Another potential risk was a breach of confidentiality; however, names of participants were not requested on the questionnaire. Scholarly project results may be published but will not include any identifiable information. There was no direct advantage to participants however, data analysis and subsequent determination of results may add to nurse anesthesia and general nursing knowledge regarding the benefits of using a standardized and organized communication tool for CRNA TOC process.

Design and Measures

The first six questions of the questionnaire measure ordinal data. A frequency table containing ordinal data from each question, number of CRNA responses for each answer, a cumulative frequency, and a cumulative percentage were determined for the first six questions. Measures of central tendency included mode and median results. Correlation between frequency of checklist use and responses to other quantitative questions were investigated. The SPSS version 24 was utilized for statistical analysis.

The remaining four qualitative questions allowed participants to describe their experience utilizing or not utilizing the PATIENT checklist. The CRNA responses were examined for similar patterns and subsequent themes. All answers were summarized and documented noting frequency of like responses.

Chapter Four

Project Summary

There is an abundance of patient TOC tools available for the generalized patient population however tools for nurse anesthesia TOC is lacking. Currently, the PATIENT protocol, created by Dr. Wright, CRNA, is the only TOC tool specially created for nurse anesthesia practice. Communication errors have been identified as a major cause of concern suggesting the need for a standardized TOC protocol. Care of the anesthetized patient is highly complex therefore, essential and accurate communication regarding the TOC process is critical. The PATIENT protocol provides a mnemonic report checklist CRNAs can utilize when transferring care to another CRNA provider. Utilization of a checklist helps decrease communication errors by providing an organized and systematic approach in providing pertinent patient information without relying on memory. A replication project involving the use of an existing TOC protocol was chosen to determine if CRNAs believed a standardized TOC process was important and provided a way to organize vital information. The chosen tool is described in the literature and supported by the AANA. Participants were asked to use the PATIENT protocol with each TOC process and to complete an established questionnaire after an approximate one-week period.

Data Analysis

Sample size for this scholarly project was 19. The first question asked how many times CRNAs utilized the PATIENT protocol. Of the 19 responses, 10.5% (n = 2) did not use the tool, 36.8% (n = 7) used the tool between 1-5 times, 36.8% (n = 7) between 6-10 times, and 15.7% (n = 3) used the tool between 11-15 times. No participant used the

tool greater than 15 times (see Table 1). The second question considered if the CRNA liked the idea of adopting a standardized TOC process. The majority of the respondents agreed at 68.4% (*n* = 13) or strongly agreed with 26.3% (*n* = 5) with one respondent disagreeing (5.2%). Participants agreed 78.9% (*n* = 15) or strongly agreed (15.7%, *n* = 3) the length of the protocol was appropriate with one respondent disagreeing (5.2%). The majority of participants agreed the protocol lends itself to memory at 68.4 % (*n* = 13) while three respondents disagreed. Respondents agreed at 73.6% (*n* = 14) and strongly agreed with 15.7% (*n* = 3) the protocol was comprehensive. Lastly, 94.7% strongly agreed (21.6%, *n* = 4) or agreed (73.6%, *n* = 14) the protocol provided an effective way to organize patient information with one participant not answering this question (see Table 2 and 3 for descriptive statistics and number of Likert responses).

Table 1

Number and Percentages of Checklist Use Frequencies

Number of Times Checklist Used	n	Percent of Total Use
0	2	10.5
1-5	7	36.8
6-10	7	36.8
11-15	3	15.8
15+	0	0.00

Table 2

Descriptive Statistics and Checklist Characteristics

Characteristics	n	Mdn	Mode	SD
Adopting the tool	19	3.00	3	.54
Appropriate length	19	3.00	3	.46
Lends itself to memory	18	2.94	3	.54
Comprehensiveness	19	3.00	3	.52
Effective way to organize information	18	3.00	3	.43

Note. 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree.

Table 3

Number of Likert Category Responses

Characteristics	Strongly Disagree	Disagree	Agree	Strongly Agree
Adopting the tool	0	1	13	5
Appropriate length	0	1	15	3
Lends itself to memory	0	3	13	2
Comprehensiveness	0	2	14	3
Effective way to organize information	0	0	14	4

The relationship between frequency of use and adopting the protocol, appropriate length, lending itself to memory, comprehensiveness, and effective organization was investigated using Spearman's Rank Order Correlation (rho). There was a small, positive correlation between frequency of use adopting a standardized TOC process, $r = .197$, $n = 19$, lending itself to memory, $r = .207$, $n = 18$, and effective organization, $r = .231$ and $n = 18$. There was a medium, positive correlation between frequency of use and appropriateness of protocol, $r = .412$, $n = 19$, and protocol comprehensiveness, $r = .305$

and $n = 19$. Statistical significance was not reached in any correlation, as all p values were > 0.05 (see Table 4).

Table 4

Spearman's Rank Order Correlation (rho) Between Frequency of Use and Checklist Characteristics

Characteristics	Spearman's rho	n
Adopting the tool	.197	19
Appropriate length	.412	19
Lends itself to memory	.207	18
Comprehensiveness	.305	19
Effective way to organize information	.231	18

Common themes noted regarding positive aspects of the protocol included it was quick yet thorough, consistent, to the point, and a standardized report. Remarks regarding patient safety noted the protocol prevented potential missed items, helped with memory lapses, and pertinent patient information not previously discussed surfaced when discussing other PATIENT categories. Suggestions for PATIENT protocol improvements included the addition of patient history as a descriptor in the P category, a specific area for any type of regional anesthesia, and a few comments questioned the need for reporting $ETCO_2$. Several comments indicated no changes were necessary. Very few respondents had not used the tool ($n = 2$) with one citing they were on vacation and others stated they had forgotten a few times and it was difficult to start. Additional comments reiterated the tool kept report on task, helped during busy times, and improved focus while giving report. A single respondent utilized it for CRNA to PACU and ICU RN transfer of care. The majority of the additional comments were very positive indicating it was a good tool and the project was improving practice (see Figure 4).

Question 7: Positive aspects of the tool
Standardizes and makes reporting quick with all pertinent data
Novel protocol
Short and to the point
Streamlines data
Quick yet thorough way to report data
Easy and flows well
Prevents potential missed items in report
Consistent
Prevents lack of memory lapses in giving report
Question 8: Suggestions for improvements/barriers to use
No barriers noted
Add patient history
Add nerve block, epidural
Add antiemetic to A, EBL to E, toradol to second P
Delete **$ETCO_2$**
Place protocol on anesthesia machine
Streamline subheadings
Question 9: Explain why you have not used the protocol
Difficult to start
Forgot
Question 10: Additional comments
Helps to keep focus during report
Keeps report on task and helps during busy times
Used for handoffs between CRNA and ICU/PACU staff
Helpful communication tool

Figure 4. Qualitative Responses.

Strengths and Limitations

Even though this scholarly project had a small sample size of 19, the response rate was 95%. The majority of the Likert-style questions were answered as agreed or strongly agreed indicating positive aspects of the PATIENT tool. This scholarly project could be easily replicated at other anesthetizing locations, as the protocol and questionnaire are short in length and easy to understand. Anesthesia TOC is an area in which there is

minimal information or studies therefore information gained from this project will add to this underdeveloped topic.

There were several limitations including not obtaining the recommended minimum number of participants (20) and the small sample size therefore additional studies and larger sample sizes are needed which may also contribute to determining correlation between variables. In addition, a person on site encouraging the use of the PATIENT tool may have encouraged CRNAs to use the tool more frequently however one could consider this a limitation noting a Hawthorne effect may occur.

One anonymous person from the sample did not return the questionnaire despite several reminders from the department's manager to all staff to complete and return the document. An email requesting survey completion from the principle investigator may have encouraged that particular CRNA to complete and return the questionnaire resulting in 100% response rate.

Future Studies

For future studies, item one on the questionnaire could be changed to an actual number versus a range so a more accurate count would be known of protocol usage. In addition, this scholarly project did not differentiate if TOC occurred for breaks or permanent end of shift transfer.

Demographic information could also be included to determine if different opinions or any correlations exist in rural versus urban areas, participant's years of practice, use of a standardized tool in the past, and type of practice setting. Also, a study focusing on patient safety by comparing the use/non-use of the PATIENT protocol could be an inter professional project between anesthesia providers, researchers, coders,

information technology, and quality management departments noting any significant patient outcomes or patient safety concerns. Anesthesia departments utilizing EMRs could embed the PATIENT protocol into their anesthesia applications allowing for data capture from multiple sources within the patient record.

Recommendations and Conclusions

Effective communication is crucial during the anesthesia transfer of patient care period. An organized and systematic communication approach decreases the potential for errors and contributes to a safe handoff process. The use of the standardized PATIENT protocol was positively received by CRNAs and indicated the tool was organized, streamlined, thorough, and conveyed vital patient information during the TOC process. The results suggested utilization of the PATIENT protocol during the CRNA handoff improved the quality of communication. Utilization of the PATIENT protocol has the potential to enhance patient safety, improve care, and lead to positive patient outcomes. Healthcare institutions providing any type of anesthesia could implement and mandate the PATIENT protocol be utilized during all TOC occurrences.

The PATIENT protocol may also be helpful when transferring care from the CRNA to the receiving nurse in the PACU and the ICU. Patient information must be accurately conveyed in order to ensure a safe TOC process regardless of who is receiving the information. Randomized controlled studies with larger sample sizes are greatly needed in all patient areas regarding the anesthesia handoff process and subsequent patient outcomes. The utilization of an embedded TOC protocol (PATIENT protocol) into the anesthesia EMR would provide objective patient data from multiple sources. Patient outcome improvements could be easily identified, discussed within an

interdisciplinary team, and incorporated into standards of patient care. Information gained from this scholarly project and future studies will add to nurse anesthesia knowledge and enhance CRNA practice. Study results have the potential to change practice leading to improved patient safety and enhanced patient outcomes when providing high quality, cost effective anesthesia care.

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APPENDIX A

Permission Letter from Dr. Suzanne Wright for Tool and Survey Use

On Tue, May 19, 2015 at 10:34 AM, Theresa Durley <tdurley@nmu.edu> wrote:

Dear Dr. Wright,
My name is Theresa Durley and I am a CRNA currently enrolled in a DNP program at Northern Michigan University, Marquette, Michigan. I found your article regarding the "PATIENT protocol" very interesting and worthwhile. In searching for a capstone/scholarly project for my DNP program, I kept returning to the patient transfer process between anesthesia providers. I found great differences between CRNAs regarding this process while in anesthesia school and as a CRNA. I am interested in doing some type of project regarding effective transfer communication and I am wondering if I could use your "PATIENT protocol" as a tool for my project? I have seen many formal and informal tools utilized and I believe your tool is concise, organized, and incorporates all the information necessary in the safe transfer of anesthesia care. Please feel free to email or call me regarding any questions or concerns you may have. I look forward to hearing from you.
Thank you,
Theresa M. Durley, CRNA, MSN, MPA

Hi Theresa,
Thank you for your note. Yes, please feel free to use the protocol. It is important to continue to draw attention to this important part of our practice. I have some pre-printed cards with the checklist printed on them and would be happy to share some with you if you let me know where to send them. They attach to one's ID badge.

Good luck with your study. If I can help in any way, please let me know.
Take care,

Suzanne M. Wright, PhD, CRNA
Associate Professor
Vice Chair for Academic Affairs
Director of Doctoral Education
Director, Center for Research in Human Simulation
Department of Nurse Anesthesia
School of Allied Health Professions

Virginia Commonwealth University
PO Box 980226
Richmond, VA 23298
804 828 9808
anesthesiaenonymous.org

Hi Dr. Wright,
Thank you very much for your prompt reply and for your permission to utilize your protocol for my DNP project. I am in the very beginning stages and I appreciate your offer for any help. I will certainly keep that in mind and contact you in the future as my project progresses. Please send the cards to the following address and again, thank you so very much. I am very committed to promoting safe, nurse anesthesia care.
Theresa Durley, CRNA, MSN, MPA
219 Jackson St. Marquette, MI 49855

On Tue, Jul 14, 2015 at 6:01 PM, Theresa Durley <tdurley@nmu.edu> wrote:
Hello again Dr. Wright,
I received the PATIENT protocol laminated cards. Thank you so much and I apologize for not thanking you sooner. In reviewing my letter to you, I noticed I had not asked permission to use your questionnaire as well. May I use it for my project? Also, I am curious if you had utilized a framework or theory for your study? I am looking at some type of communication theory for my project. Thank you again.
Theresa Durley, CRNA, MSN, MPA

From: "Suzanne M Wright" <smwright@vcu.edu>

Subject: Re: PATIENT protocol

Date: Mon, July 20, 2015 12:14 am

To: "Theresa Durley" <tdurley@nmu.edu>

Hello Theresa,

Yes, please feel free to use the survey. As this was a research project, I did not use a theory in the publication.

I would also suggest a theory on cognition, something that explains how people retrieve and apply information.

Good luck,

Take care,

Suzanne M. Wright, PhD, CRNA
Associate Professor
Vice Chair for Academic Affairs
Director of Doctoral Education
Director, Center for Research in Human Simulation
Department of Nurse Anesthesia
School of Allied Health Professions
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APPENDIX B

Survey Questionnaire

1. Over the past week, how many times did you use, to some extent, the PATIENT protocol intraoperatively when either giving or receiving report of an anesthetized patient?
    a. 0
    b. 1-5
    c. 6-10
    d. 11-15
    e. 15+
2. I like the idea of adopting a standardized transfer of care process for use intraoperatively when giving/receiving report of an anesthetized patient.
    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
3. The length of the PATIENT protocol is appropriate.
    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
4. The PATIENT protocol lends itself to memory.
    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
5. The PATIENT protocol is comprehensive.
    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
6. The PATIENT protocol provides an effective way of organizing important information.
    a. Strongly Disagree
    b. Disagree
    c. Agree
    d. Strongly Agree
7. If you have used the PATIENT protocol in the past week, please briefly describe any positive aspects of the process.
8. If you have used the PATIENT protocol in the past week, please provide suggestions for improvement/barriers to use.
9. If you have chosen not to use the PATIENT protocol in the past week, please explain.
10. Additional comments

Figure B1. Adapted from "Examining Transfer of Care Processes in Nurse Anesthesia Practice: Introducing the PATIENT Protocol," by S. M. Wright, 2013, *AANA Journal, 81*, p. 230.

APPENDIX C

Perioperative Patient Model Permission for Use Letter Use Letter

AORN
Association of periOperative Registered Nurses
2170 South Parker Road, Suite 300 Denver, CO 80231-5711 (303) 755-6300 or (303) 755-6304 http://www.aorn.org/

February 28, 2017

Theresa M Durley, CRNA, MSN, MPA
Northern Michigan University
1401 Presque Isle Ave, School of Nursing
Marquette, Michigan, 49855
tdurley@nmu.edu

Dear Ms Durley:

Thank you for requesting permission to use the AORN Perioperative Patient Focused Model from the AORN *Perioperative Nursing Data Set* as part of a DNP scholarly project.

Permission is granted to use the AORN Perioperative Patient Focused Model from the AORN *Perioperative Nursing Data Set* in an academic paper to be bound and kept at Northern Michigan University and a poster, and for that project and poster to be hosted on the Northern Michigan University website for scholarly projects with the following conditions:

1. Permission is good for one project and poster.

2. This content may be subject to periodic updating and revision by AORN, and it is your responsibility to be aware of updates and revisions that may make it advisable for this content to be removed from your project. AORN accepts no responsibility for notification of these changes other than what AORN posts on its website and its other communication vehicles.

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Thank you again for your interest in AORN content.

Sincerely,

Zac Wiggy
Editor, AORN

APPENDIX D

MGH IRB Letter

UP HEALTH SYSTEM
MARQUETTE
A Duke LifePoint Hospital

June 24, 2016

Theresa M. Durley
2407 New Science Facility
Northern Michigan University
Marquette, MI 49855

Re: **Application of the PATIENT Protocol in Anesthesia Handoffs**

Dear Theresa,

Review of the above referenced study by the UP Health System – Marquette's (UPHS-M) Institutional Review Board (IRB) has been completed as of June 10, 2015. This is a study involving a sample of volunteer CRNAs utilizing the PATIENT protocol for anesthesia handoffs. A mixed methods questionnaire will follow after an approximate 1 week period of utilization of the PATIENT protocol. Instruction will be provided at two CRNA staff meetings. Questionnaires will be returned to principal investigator via self-addressed stamped envelope or at the second CRNA staff meeting.

It was determined that this study qualifies for an IRB exemption per 45 CFR 46.110(b)(4) from all 45 CFR Part 46 requirements of the Office for Human Research Protections.

Thank you for bringing this project to our attention. This Board would be interested in reviewing your final report when available. If we can be of any future help, please do not hesitate to contact this Board.

Sincerely,

Surrell, M.D.

James Surrell, M.D., Chairman
Institutional Review Board

580 West College Avenue • Marquette, MI 49855
UPHealthSystem.com

APPENDIX E

NMU IRB LETTER

Office of Graduate Education and Research
1401 Presque Isle Avenue
Marquette, MI 49855-5301
906-227-2300
FAX: 906-227-2315
Web site: www.nmu.edu

Memorandum

TO: Theresa Durley
Nursing Department

CC: Katherine Menard
Nursing Department

FROM: Dr. Robert Winn
Assistant Provost/IRB Administrator

DATE: June 30, 2016

SUBJECT: IRB Proposal HS16-775
"Application of the PATIENT Protocol in Anesthesia Handoffs"
IRB Approval Dates: 6/29/2016 - 6/29/2017**
Proposed Project Dates: 6/1/2016-3/1/2017

Your proposal "Application of the PATIENT Protocol in Anesthesia Handoffs" has been approved under the administrative review process. Please include your proposal number (HS16-775) on all research materials and on any correspondence regarding this project.

Any changes or revisions to your approved research plan must be approved by the Institutional Review Board (IRB) prior to implementation.

**If you do not complete your project within 12 months from the date of your approval notification, you must submit a Project Renewal Form for Research Involving Human Subjects. You may apply for a one-year project renewal up to four times.

All forms can be found at the NMU Grants and Research website:
http://www.nmu.edu/grantsandresearch/node/102

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APPENDIX F

Letter Distributed to Study Participants

June 24, 2016

Dear CRNA:

I am conducting a research study for a Doctorate of Nursing Practice (DNP) project entitled Application of the PATIENT Protocol in Anesthesia Handoffs. The purpose of the study is to determine if CRNAs believe the PATIENT protocol communication tool enhances communication during transfer of patient care between CRNAs. A secondary purpose is to add to nurse anesthesia knowledge. Participation is voluntary and refusal to participate or discontinue participation involves no penalty or loss of benefits. Participant sample size is approximately 20. Study results may be published but will not include any identifiable information. The survey should take less than 10 minutes to complete.

If you choose to participate, please utilize the PATIENT protocol for all anesthesia handoffs including breaks and end of shift transfer of care. After a 1 week period of time, please complete the attached questionnaire and return to Theresa M. Durley via the self-addressed stamped envelope. If you are unable to mail the questionnaire, you can also submit it at the next CRNA staff meeting.

Completion of the questionnaire serves as consent to participate in this research study. Risks include loss of work time due to using an unfamiliar PATIENT protocol and filling out the questionnaire. To minimize the time participants will need to commit, instructions will be provided at the CRNA staff meeting. Another potential risk is a breach of confidentiality, however, names of participants will not be requested on the questionnaire. Data will be secured in the principal investigator's locked office in a locked cabinet for a period of seven years following completion of the study.

If any questions or concerns should arise in regards to the PATIENT protocol or questionnaire, please contact Primary Investigator, Theresa M. Durley at Northern Michigan University, 2407 New Science Facility, Marquette, MI 49855, by phone at (906) 227-2478, or by email at tdurley@nmu.edu.

We thank you for your anticipated participation.

Sincerely,

Theresa M. Durley, CRNA, MPA, MSN

Katherine Menard, PhD, RN, CCRN, CNE